SEQUENCE LISTING

<110> Hellman, Lars T.

<120> ENHANCED VACCINES

<130> 10223/006001

<140> US 09/401,636
<141> 1999-09-22

<150> US 60/106,652
<151> 1998-11-02

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Val Lys Ile Leu Gln Ser Ser Cys Asp Gly Gly Gly His Phe Pro Pro
            20                  25                  30
Thr Ile Gln Leu Leu Cys Leu Val Ser Gly Tyr Thr Pro Gly Thr Ile
        35                  40                  45
Asn Ile Thr Trp Leu Glu Asp Gly Gln Val Met Asp Val Asp Leu Ser
    50                  55                  60
Thr Ala Ser Thr Thr Gln Glu Gly Glu Leu Ala Ser Thr Gln Ser Glu
65                  70                  75                  80
Leu Thr Leu Ser Gln Lys His Trp Leu Ser Asp Arg Thr Tyr Thr Cys
                85                  90                  95
Gln Val Thr Tyr Gln Gly His Thr Phe Glu Asp Ser Thr Lys Lys Cys
            100                 105                 110
Ala Asp Ser Asn Pro Arg Gly Val Ser Ala Tyr Leu Ser Arg Pro Ser
        115                 120                 125
Pro Phe Asp Leu Phe Ile Arg Lys Ser Pro Thr Ile Thr Cys Leu Val
    130                 135                 140
Val Asp Leu Ala Pro Ser Lys Gly Thr Val Asn Leu Thr Trp Ser Arg
145                 150                 155                 160
Ala Ser Gly Lys Pro Val Asn His Ser Thr Arg Lys Glu Glu Lys Gln
                165                 170                 175
Arg Asn Gly Thr Leu Thr Val Thr Ser Thr Leu Pro Val Gly Thr Arg
            180                 185                 190
Asp Trp Ile Glu Gly Glu Thr Tyr Gln Cys Arg Val Thr His Pro His
        195                 200                 205
Leu Pro Arg Ala Leu Met Arg Ser Thr Thr Lys Thr Ser Gly Pro Arg
    210                 215                 220
Ala Ala Pro Glu Val Tyr Ala Phe Ala Thr Pro Glu Trp Pro Gly Ser
225                 230                 235                 240
Arg Asp Lys Arg Thr Leu Ala Cys Leu Ile Gln Asn Phe Met Pro Glu
                245                 250                 255
Asp Ile Ser Val Gln Trp Leu His Asn Glu Val Gln Leu Pro Asp Ala
            260                 265                 270
```

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Arg His Ser Thr Thr Gln Pro Arg Lys Thr Lys Gly Ser Gly Phe Phe
        275                 280                 285
Val Phe Ser Arg Leu Glu Val Thr Arg Ala Glu Trp Glu Gln Lys Asp
    290                 295                 300
Glu Phe Ile Cys Arg Ala Val His Glu Ala Ala Ser Pro Ser Gln Thr
305                 310                 315                 320
Val Gln Arg Ala Val Ser Val Asn Pro Gly Lys
                325                 330
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<210> 2
<211> 340
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated proteins

<400> 2

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Asp Leu Thr Ile Arg Ala Arg Pro Val Asn Ile Thr Lys Pro Thr Val
  1               5                  10                  15
Asp Leu Leu His Ser Ser Cys Asp Pro Asn Ala Phe His Ser Thr Ile
            20                  25                  30
Gln Leu Tyr Cys Phe Val Tyr Gly His Ile Gln Asn Asp Val Ser Ile
        35                  40                  45
His Trp Leu Met Asp Asp Arg Lys Ile Tyr Glu Thr His Ala Gln Asn
    50                  55                  60
Val Leu Ile Lys Glu Glu Gly Lys Leu Ala Ser Thr Tyr Ser Arg Leu
65                  70                  75                  80
Asn Ile Thr Gln Gln Gln Trp Met Ser Glu Ser Thr Phe Thr Cys Lys
                85                  90                  95
Val Thr Ser Gln Gly Glu Asn Tyr Trp Ala His Thr Arg Arg Cys Ser
            100                 105                 110
Asp Asp Glu Pro Arg Gly Val Ile Thr Tyr Leu Ile Pro Pro Ser Pro
        115                 120                 125
Leu Asp Leu Tyr Glu Asn Gly Thr Pro Lys Leu Thr Cys Leu Val Leu
    130                 135                 140
Asp Leu Glu Ser Glu Glu Asn Ile Thr Val Thr Trp Val Arg Glu Arg
145                 150                 155                 160
Lys Lys Ser Ile Gly Ser Ala Ser Gln Arg Ser Thr Lys His His Asn
                165                 170                 175
Ala Thr Thr Ser Ile Thr Ser Ile Leu Pro Val Asp Ala Lys Asp Trp
            180                 185                 190
Ile Glu Gly Glu Gly Tyr Gln Cys Arg Val Asp His Pro His Phe Pro
        195                 200                 205
Lys Pro Ile Val Arg Ser Ile Thr Lys Ala Pro Gly Lys Arg Ser Ala
    210                 215                 220
Pro Glu Val Tyr Val Phe Leu Pro Pro Glu Glu Glu Glu Lys Asp Lys
225                 230                 235                 240
Arg Thr Leu Thr Cys Leu Ile Gln Asn Phe Phe Pro Glu Asp Ile Ser
                245                 250                 255
Val Gln Trp Leu Gln Asp Ser Lys Leu Ile Pro Lys Ser Gln His Ser
            260                 265                 270
Thr Thr Thr Pro Leu Lys Tyr Asn Gly Ser Asn Gln Arg Phe Phe Ile
        275                 280                 285
Phe Ser Arg Leu Glu Val Thr Lys Ala Leu Trp Thr Gln Thr Lys Gln
    290                 295                 300
Phe Thr Cys Arg Val Ile His Glu Ala Leu Arg Glu Pro Arg Lys Leu
305                 310                 315                 320
Glu Arg Thr Il  Ser Lys Ser Leu Gly Asn Thr Ser Leu Arg Pro Ser
                325                 330                 335
Gln Ala Ser Met
            340
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<210> 3
<211> 341
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated proteins

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Glu Phe His His His His His His Thr Leu Ser Leu Pro Glu Ser Gly
1 5 10 15
Pro Val Thr Ile Ile Pro Pro Thr Val Lys Leu Phe His Ser Ser Cys
20 25 30
Asp Pro Arg Gly Asp Ala His Ser Thr Ile Gln Leu Leu Cys Leu Val
35 40 45
Ser Gly Phe Ser Pro Ala Lys Val His Val Thr Trp Leu Val Asp Gly
50 55 60
Gln Glu Ala Glu Asn Leu Phe Pro Tyr Thr Thr Arg Pro Lys Arg Glu
65 70 75 80
Gly Gly Gln Thr Phe Ser Leu Gln Ser Glu Val Asn Ile Thr Gln Gly
85 90 95
Gln Trp Met Ser Ser Asn Thr Tyr Thr Cys His Val Lys His Asn Gly
100 105 110
Ser Ile Phe Glu Asp Ser Ala Gln Lys Cys Ser Asp Thr Asp Pro Arg
115 120 125
Gly Ile Ser Ala Tyr Ile Leu Pro Pro Thr Pro Gln Asp Leu Phe Val
130 135 140
Lys Lys Val Pro Thr Ile Gly Cys Leu Ile Val Asp Leu Ala Ser Ala
145 150 155 160
Glu Asn Val Lys Val Thr Trp Ser Arg Glu Ser Gly Gly Pro Val Asn
165 170 175
Pro Ser Ser Leu Val Val Lys Glu Gln Tyr Asn Gly Thr Phe Thr Val
180 185 190
Thr Ser His Leu Pro Val Asn Thr Asp Asp Trp Ile Glu Gly Asp Thr
195 200 205
Tyr Thr Cys Arg Leu Glu Ser Pro Asp Met Pro Val Pro Leu Ile Arg
210 215 220
Thr Ile Ser Lys Ala Pro Gly Lys Arg Leu Ala Pro Glu Val Tyr Met
225 230 235 240
Leu Pro Pro Ser Pro Glu Glu Thr Gly Thr Thr Arg Thr Val Thr Cys
245 250 255
Leu Ile Arg Gly Phe Tyr Pro Ser Glu Ile Ser Val Gln Trp Leu Phe
260 265 270
Asn Asn Glu Glu Asp His Thr Gly His His Thr Thr Thr Arg Pro Gln
275 280 285
Lys Asp His Gly Thr Asp Pro Ser Phe Phe Leu Tyr Ser Arg Met Leu
290 295 300
Val Asn Lys Ser Ile Trp Glu Lys Gly Asn Leu Val Thr Cys Arg Val
305 310 315 320
Val His Glu Ala Leu Pro Gly Ser Arg Thr Leu Glu Lys Ser Leu His
325 330 335
Tyr Ser Ala Gly Asn
340

<210> 4
<211> 341
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically g nerated proteins

<400> 4
Glu Phe His His His His His His Thr Leu Ser Leu Pro Glu Ser Gly
1 5 10 15
Pro Val Thr Ile Ile Pro Pro Thr Val Lys Leu Phe His Ser Ser Cys
20 25 30
Asp Pro Arg Gly Asp Ala His Ser Thr Ile Gln Leu Leu Cys Leu Val
35 40 45
Ser Gly Phe Ser Pro Ala Lys Val His Val Thr Trp Leu Val Asp Gly
50 55 60
Gln Glu Ala Glu Asn Leu Phe Pro Tyr Thr Thr Arg Pro Lys Arg Glu
65 70 75 80
Gly Gly Gln Thr Phe Ser Leu Gln Ser Glu Val Asn Ile Thr Gln Gly
85 90 95
Gln Trp Met Ser Ser Asn Thr Tyr Thr Cys His Val Lys His Asn Gly
100 105 110
Ser Ile Phe Glu Asp Ser Ser Arg Arg Cys Ser Asp Asp Glu Pro Arg
115 120 125
Gly Val Ile Thr Tyr Leu Ile Pro Pro Ser Pro Leu Asp Leu Tyr Glu
130 135 140
Asn Gly Thr Pro Lys Leu Thr Cys Leu Val Leu Asp Leu Glu Ser Glu
145 150 155 160
Glu Asn Ile Thr Val Thr Trp Val Arg Glu Arg Lys Lys Ser Ile Gly
165 170 175
Ser Ala Ser Gln Arg Ser Thr Lys His His His Ala Thr Thr Ser Ile
180 185 190
Thr Ser Ile Leu Pro Val Asp Ala Lys Asp Trp Ile Glu Gly Glu Gly
195 200 205
Tyr Gln Cys Arg Val Asp His Pro His Phe Pro Lys Pro Ile Val Arg
210 215 220
Ser Ile Thr Lys Leu Pro Gly Lys Arg Leu Ala Pro Glu Val Tyr Met
225 230 235 240
Leu Pro Pro Ser Pro Glu Glu Thr Gly Thr Thr Arg Thr Val Thr Cys
245 250 255
Leu Ile Arg Gly Phe Tyr Pro Ser Glu Ile Ser Val Gln Trp Leu Pro
260 265 270
Asn Asn Glu Glu Asp His Thr Gly His His Thr Thr Thr Arg Pro Gln
275 280 285
Lys Asp His Gly Thr Asp Pro Ser Phe Phe Leu Tyr Ser Arg Met Leu
290 295 300
Val Asn Lys Ser Ile Trp Glu Lys Gly Asn Leu Val Thr Cys Arg Val
305 310 315 320
Val His Glu Ala Leu Pro Gly Ser Arg Thr Leu Glu Lys Ser Leu His
325 330 335
Tyr Ser Ala Gly Asn
340

<210> 5
<211> 342
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated proteins

<400> 5
Glu Phe His His His His His His Thr Leu Ser Leu Pro Glu Ser Gly
1 5 10 15
Pro Val Thr Ile Ile Pro Pro Thr Val Lys Leu Phe His Ser Ser Cys
20 25 30
Asp Pro Arg Gly Asp Ala His Ser Thr Ile Gln Leu Leu Cys Leu Val
35 40 45

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Ser Gly Phe Ser Pro Ala Lys Val His Val Thr Trp Leu Val Asp Gly
     50                  55                  60
Gln Glu Ala Glu Asn Leu Phe Pro Tyr Thr Thr Arg Pro Lys Arg Glu
 65                  70                  75                  80
Gly Gly Gln Thr Phe Ser Leu Gln Ser Glu Val Asn Ile Thr Gln Gly
                 85                  90                  95
Gln Trp Met Ser Ser Asn Thr Tyr Thr Cys His Val Lys His Asn Gly
            100                 105                 110
Ser Ile Phe Glu Asp Ser Ser Arg Arg Cys Ser Asp Asp Glu Pro Arg
        115                 120                 125
Gly Val Ile Thr Tyr Leu Ile Pro Pro Ser Pro Leu Asp Leu Tyr Glu
    130                 135                 140
Asn Gly Thr Pro Lys Leu Thr Cys Leu Val Leu Asp Leu Glu Ser Glu
145                 150                 155                 160
Glu Asn Ile Thr Val Thr Trp Val Arg Glu Arg Lys Lys Ser Ile Gly
                165                 170                 175
Ser Ala Arg Ser Leu Val Val Lys Glu Gln Tyr Asn Gly Thr Phe Thr
            180                 185                 190
Val Thr Ser His Leu Pro Val Asn Thr Asp Asp Trp Ile Glu Gly Asp
        195                 200                 205
Thr Tyr Thr Cys Arg Leu Glu Ser Pro Asp Met Pro Tyr Pro Leu Ile
    210                 215                 220
Arg Thr Ile Ser Lys Ala Pro Gly Lys Arg Leu Ala Pro Glu Val Tyr
225                 230                 235                 240
Met Leu Pro Pro Ser Pro Glu Glu Thr Gly Thr Thr Arg Thr Val Thr
                245                 250                 255
Cys Leu Ile Arg Gly Phe Tyr Pro Ser Glu Ile Ser Val Gln Trp Leu
            260                 265                 270
Pro Asn Asn Glu Glu Asp His Thr Gly His His Thr Thr Thr Arg Pro
        275                 280                 285
Gln Lys Asp His Gly Thr Asp Pro Ser Phe Phe Leu Tyr Ser Arg Met
    290                 295                 300
Leu Val Asn Lys Ser Ile Trp Glu Lys Gly Asn Leu Val Thr Cys Arg
305                 310                 315                 320
Val Val His Glu Ala Leu Pro Gly Ser Arg Thr Leu Glu Lys Ser Leu
                325                 330                 335
His Tyr Ser Ala Gly Asn
            340
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<210> 6
<211> 341
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated proteins

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<400> 6
Glu Phe His His His His His His Thr Leu Ser Leu Pro Glu Ser Gly
  1                 5                  10                  15
Pro Val Thr Ile Ile Pro Pro Thr Val Lys Leu Phe His Ser Ser Cys
             20                  25                  30
Asp Pro Arg Gly Asp Ala His Ser Thr Ile Gln Leu Leu Cys Leu Val
         35                  40                  45
Ser Gly Phe Ser Pro Ala Lys Val His Val Thr Trp Leu Val Asp Gly
     50                  55                  60
Gln Glu Ala Glu Asn Leu Ph  Pro Tyr Thr Thr Arg Pro Lys Arg Glu
 65                  70                  75                  80
Gly Gly Gln Thr Phe Ser Leu Gln Ser Glu Val Asn Il  Thr Gln Gly
                 85                  90                  95
Gln Trp Met Ser Ser Asn Thr Tyr Thr Cys His Val Lys His Asn Gly
            100                 105                 110
```

```
Ser Ile Phe Glu Asp Ser Ser Arg Arg Cys Pro Asp His Glu Pro Arg
        115                 120                 125
Gly Val Ile Thr Tyr Leu Ile Pro Pro Ser Pro Leu Asp Leu Tyr Gln
    130                 135                 140
Asn Gly Ala Pro Lys Leu Thr Cys Leu Val Val Asp Leu Glu Ser Glu
145                 150                 155                 160
Lys Asn Val Asn Val Thr Trp Asn Gln Glu Lys Lys Thr Ser Val Asn
                165                 170                 175
Ala Ser Gln Trp Tyr Thr Lys His His Asn Asn Ala Thr Thr Ser Ile
            180                 185                 190
Thr Ser Ile Leu Pro Val Val Ala Lys Asp Trp Ile Glu Gly Tyr Gly
        195                 200                 205
Tyr Gln Cys Ile Val Asp His Pro Asp Phe Pro Lys Pro Ile Val Arg
    210                 215                 220
Ser Ile Thr Lys Leu Pro Gly Lys Arg Leu Ala Pro Glu Val Tyr Met
225                 230                 235                 240
Leu Pro Pro Ser Pro Glu Glu Thr Gly Thr Thr Arg Thr Val Thr Cys
                245                 250                 255
Leu Ile Arg Gly Phe Tyr Pro Ser Glu Ile Ser Val Gln Trp Leu Pro
            260                 265                 270
Asn Asn Glu Glu Asp His Thr Gly His His Thr Thr Thr Arg Pro Gln
        275                 280                 285
Lys Asp His Gly Thr Asp Pro Ser Phe Phe Leu Tyr Ser Arg Met Leu
    290                 295                 300
Val Asn Lys Ser Ile Trp Glu Lys Gly Asn Leu Val Thr Cys Arg Val
305                 310                 315                 320
Val His Glu Ala Leu Pro Gly Ser Arg Thr Leu Glu Lys Ser Leu His
                325                 330                 335
Tyr Ser Ala Gly Asn
            340
```

<210> 7
<211> 343
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated proteins

<400> 7

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Glu Phe His His His His His His Thr Glu Val Tyr Ser Asp Ser Ser
  1               5                  10                  15
Lys Asp Pro Ile Pro Pro Thr Val Lys Leu Leu His Ser Ser Cys Asp
            20                  25                  30
Pro Arg Gly Asp Ser Gln Ala Ser Ile Glu Leu Leu Cys Leu Ile Thr
        35                  40                  45
Gly Tyr Ser Pro Ala Gly Ile Gln Val Asp Trp Leu Val Asp Gly Gln
    50                  55                  60
Lys Ala Glu Asn Leu Phe Pro Tyr Thr Ala Pro Pro Lys Arg Glu Gly
65                  70                  75                  80
Asn Arg Ser Phe Ser Ser His Ser Glu Val Asn Ile Thr Gln Asp Gln
                85                  90                  95
Trp Leu Ser Gly Lys Thr Phe Thr Cys Gln Val Thr His Leu Ala Asp
            100                 105                 110
Lys Lys Thr Tyr Gln Asp Ser Ala Pro Lys Cys Ala Asp Ser Asp Pro
        115                 120                 125
Arg Gly Ile Thr Val Phe Ile Thr Pro Pro Ser Pro Thr Asp Leu Tyr
    130                 135                 140
Ile Ser Lys Thr Pro Lys Leu Thr Cys Leu Il  Ile Asp Leu Val Ser
145                 150                 155                 160
Thr Glu Gly Met Glu Val Thr Trp Ser Arg Glu Ser Gly Thr Pro L u
                165                 170                 175
```

```
Ser Ala Glu Ser Phe Glu Glu Gln Lys Gln Phe Asn Gly Thr Met Ser
            180                 185                 190
Phe Ile Ser Thr Val Pro Val Asn Ile Gln Asp Trp Asn Arg Gly Glu
        195                 200                 205
Ser Tyr Thr Cys Pro Val Ala His Pro Asp Leu Pro Ser Pro Ile Ile
    210                 215                 220
Lys Thr Val Thr Lys Leu Pro Gly Lys Pro Leu Ala Pro Glu Val Tyr
225                 230                 235                 240
Ala Phe Pro Pro His Gln Ala Glu Val Ser His Gly Ala Ser Leu Ser
                245                 250                 255
Leu Thr Cys Leu Ile Pro Gly Phe Tyr Pro Glu Asn Ile Ser Val Arg
            260                 265                 270
Trp Leu Leu Asp Asn Lys Pro Leu Pro Thr Glu His Tyr Arg Thr Thr
        275                 280                 285
Lys Pro Leu Lys Asp Gln Gly Pro Asp Pro Ala Tyr Phe Leu Tyr Ser
    290                 295                 300
Pro Leu Ala Val Asn Lys Ser Thr Trp Glu Gln Gly Asn Val Tyr Thr
305                 310                 315                 320
Cys Gln Val Val His Glu Ala Leu Pro Ser Arg Asn Thr Glu Arg Lys
                325                 330                 335
Phe Gln His Thr Ser Gly Asn
            340
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<210> 8
<211> 342
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated proteins

<400> 8

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Glu Phe His His His His His His Thr Leu Ser Leu Pro Glu Ser Gly
  1                 5                  10                  15
Pro Val Thr Ile Ile Pro Pro Thr Val Lys Leu Phe His Ser Ser Cys
             20                  25                  30
Asp Pro Arg Gly Asp Ala His Ser Thr Ile Gln Leu Leu Cys Leu Val
         35                  40                  45
Ser Gly Phe Ser Pro Ala Lys Val His Val Thr Trp Leu Val Asp Gly
     50                  55                  60
Gln Glu Ala Glu Asn Leu Phe Pro Tyr Thr Thr Arg Pro Lys Arg Glu
 65                  70                  75                  80
Gly Gly Gln Thr Phe Ser Leu Gln Ser Glu Val Asn Ile Thr Gln Gly
                 85                  90                  95
Gln Trp Met Ser Ser Asn Thr Tyr Thr Cys His Val Lys His Asn Gly
            100                 105                 110
Ser Ile Phe Glu Asp Ser Ser Arg Lys Cys Ala Asp Ser Asn Pro Arg
        115                 120                 125
Gly Val Ser Ala Tyr Leu Ser Arg Pro Ser Pro Phe Asp Leu Phe Ile
    130                 135                 140
Arg Lys Ser Pro Thr Ile Thr Cys Leu Val Val Asp Leu Ala Pro Ser
145                 150                 155                 160
Lys Gly Thr Val Asn Leu Thr Trp Ser Arg Ala Ser Gly Lys Pro Val
                165                 170                 175
Asn His Ser Thr Arg Lys Glu Glu Lys Gln Arg Asn Gly Thr Leu Thr
            180                 185                 190
Val Thr Ser Thr Leu Pro Val Gly Thr Arg Asp Trp Ile Glu Gly Glu
        195                 200                 205
Thr Tyr Gln Cys Arg Val Thr His Pro His Leu Pro Arg Ala Leu Met
    210                 215                 220
Arg Ser Thr Thr Lys Leu Pro Gly Lys Arg Leu Ala Pro Glu Val Tyr
225                 230                 235                 240
```

```
Met Leu Pro Pro Ser Pro Glu Glu Thr Gly Thr Thr Arg Thr Val Thr
                245                 250                 255
Cys Leu Ile Arg Gly Phe Tyr Pro Ser Glu Ile Ser Val Gln Trp Leu
            260                 265                 270
Phe Asn Asn Glu Glu Asp His Thr Gly His His Thr Thr Thr Arg Pro
        275                 280                 285
Gln Lys Asp His Gly Thr Asp Pro Ser Phe Phe Leu Tyr Ser Arg Met
    290                 295                 300
Leu Val Asn Lys Ser Ile Trp Glu Lys Gly Asn Leu Val Thr Cys Arg
305                 310                 315                 320
Val Val His Glu Ala Leu Pro Gly Ser Arg Thr Leu Glu Lys Ser Leu
                325                 330                 335
His Tyr Ser Ala Gly Asn
            340
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<210> 9
<211> 341
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated proteins

<400> 9

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Glu Phe His His His His His His Thr Leu Ser Leu Pro Glu Ser Gly
  1                 5                  10                  15
Pro Val Thr Ile Ile Pro Pro Thr Val Lys Leu Phe His Ser Ser Cys
            20                  25                  30
Asp Pro Arg Gly Asp Ala His Ser Thr Ile Gln Leu Leu Cys Leu Val
        35                  40                  45
Ser Gly Phe Ser Pro Ala Lys Val His Val Thr Trp Leu Val Asp Gly
    50                  55                  60
Gln Glu Ala Glu Asn Leu Phe Pro Tyr Thr Thr Arg Pro Lys Arg Glu
65                  70                  75                  80
Gly Gly Gln Thr Phe Ser Leu Gln Ser Glu Val Asn Ile Thr Gln Gly
                85                  90                  95
Gln Trp Met Ser Ser Asn Thr Tyr Thr Cys His Val Lys His Asn Gly
            100                 105                 110
Ser Ile Phe Glu Asp Ser Ser Arg Arg Cys Ser Asp Asp Glu Pro Arg
        115                 120                 125
Gly Val Ile Thr Tyr Leu Ile Pro Pro Ser Pro Leu Asp Leu Tyr Glu
    130                 135                 140
Asn Gly Thr Pro Lys Leu Thr Cys Leu Val Leu Asp Leu Glu Ser Glu
145                 150                 155                 160
Glu Asn Ile Thr Val Thr Trp Val Arg Glu Arg Lys Lys Ser Ile Gly
                165                 170                 175
Ser Ala Ser Gln Arg Ser Thr Lys His His Asn Ala Thr Thr Ser Ile
            180                 185                 190
Thr Ser Ile Leu Pro Val Asp Ala Lys Asp Trp Ile Glu Gly Glu Gly
        195                 200                 205
Tyr Gln Cys Arg Val Asp His Pro His Phe Pro Lys Pro Ile Val Arg
    210                 215                 220
Ser Ile Thr Lys Leu Pro Gly Lys Arg Leu Ala Pro Glu Val Tyr Met
225                 230                 235                 240
Leu Pro Pro Ser Pro Glu Glu Thr Gly Thr Thr Arg Thr Val Thr Cys
                245                 250                 255
Leu Ile Arg Gly Phe Tyr Pro Ser Glu Ile Ser Val Gln Trp Leu Phe
            260                 265                 270
Asn Asn Glu Glu Asp His Thr Gly His His Thr Thr Thr Arg Pro Gln
        275                 280                 285
Lys Asp His Gly Thr Asp Pro Ser Phe Phe Leu Tyr Ser Arg Met L u
    290                 295                 300
```

```
Val Asn Lys Ser Ile Trp Glu Lys Gly Asn Leu Val Thr Cys Arg Val
305                 310                 315                 320
Val His Glu Ala Leu Pro Gly Ser Arg Thr Leu Glu Lys Ser Leu His
                325                 330                 335
Tyr Ser Ala Gly Asn
            340
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<210> 10
<211> 345
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated proteins

<400> 10

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Glu Phe His His His His His His Thr Leu Ser Leu Pro Glu Ser Gly
  1               5                  10                  15
Pro Val Thr Ile Ile Pro Pro Thr Val Lys Leu Phe His Ser Ser Cys
            20                  25                  30
Asp Pro Arg Gly Asp Ala His Ser Thr Ile Gln Leu Leu Cys Leu Val
        35                  40                  45
Ser Gly Phe Ser Pro Ala Lys Val His Val Thr Trp Leu Val Asp Gly
    50                  55                  60
Gln Glu Ala Glu Asn Leu Phe Pro Tyr Thr Thr Arg Pro Lys Arg Glu
65                  70                  75                  80
Gly Gly Gln Thr Phe Ser Leu Gln Ser Glu Val Asn Ile Thr Gln Gly
                85                  90                  95
Gln Trp Met Ser Ser Asn Thr Tyr Thr Cys His Val Lys His Asn Gly
            100                 105                 110
Ser Ile Phe Glu Asp Ser Ser Arg Arg Cys Thr Ala Glu Ser Glu Pro
        115                 120                 125
Arg Gly Val Ser Ala Tyr Leu Ser Pro Pro Thr Pro Leu Asp Leu Tyr
    130                 135                 140
Val His Lys Ser Pro Lys Leu Thr Cys Leu Val Val Asp Leu Ala Ser
145                 150                 155                 160
Ser Glu Asn Val Asn Leu Leu Trp Ser Arg Glu Asn Lys Gly Gly Val
                165                 170                 175
Ile Leu Pro Pro Pro Gly Pro Pro Val Ile Lys Pro Gln Phe Asn Gly
            180                 185                 190
Thr Phe Ser Ala Thr Ser Thr Leu Pro Val Asn Val Ser Asp Trp Ile
        195                 200                 205
Glu Gly Glu Thr Tyr Tyr Cys Asn Val Thr His Pro Asp Leu Pro Lys
    210                 215                 220
Pro Ile Leu Arg Ser Ile Ser Lys Leu Pro Gly Lys Arg Leu Ala Pro
225                 230                 235                 240
Glu Val Tyr Met Leu Pro Pro Ser Pro Glu Glu Thr Gly Thr Thr Arg
                245                 250                 255
Thr Val Thr Cys Leu Ile Arg Gly Phe Tyr Pro Ser Glu Ile Ser Val
            260                 265                 270
Gln Trp Leu Phe Asn Asn Glu Glu Asp His Thr Gly His His Thr Thr
        275                 280                 285
Thr Arg Pro Gln Lys Asp His Gly Thr Asp Pro Ser Phe Phe Leu Tyr
    290                 295                 300
Ser Arg Met Leu Val Asn Lys Ser Ile Trp Glu Lys Gly Asn Leu Val
305                 310                 315                 320
Thr Cys Arg Val Val His Glu Ala Leu Pro Gly Ser Arg Thr Leu Glu
                325                 330                 335
Lys Ser Leu His Tyr Ser Ala Gly Asn
            340                 345
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<210> 11
<211> 341
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated proteins

<400> 11

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Glu Phe His His His His His His Thr Leu Ser Leu Pro Glu Ser Gly
  1               5                  10                  15
Pro Val Thr Ile Ile Pro Pro Thr Val Lys Leu Phe His Ser Ser Cys
            20                  25                  30
Asp Pro Arg Gly Asp Ala His Ser Thr Ile Gln Leu Leu Cys Leu Val
        35                  40                  45
Ser Gly Phe Ser Pro Ala Lys Val His Val Thr Trp Leu Val Asp Gly
    50                  55                  60
Gln Glu Ala Glu Asn Leu Phe Pro Tyr Thr Thr Arg Pro Lys Arg Glu
65                  70                  75                  80
Gly Gly Gln Thr Phe Ser Leu Gln Ser Glu Val Asn Ile Thr Gln Gly
                85                  90                  95
Gln Trp Met Ser Ser Asn Thr Tyr Thr Cys His Val Lys His Asn Gly
            100                 105                 110
Ser Ile Phe Glu Asp Ser Ser Arg Lys Cys Ser Glu Ser Asp Pro Arg
        115                 120                 125
Gly Val Thr Ser Tyr Leu Ser Pro Pro Ser Pro Leu Asp Leu Tyr Val
    130                 135                 140
His Lys Ala Pro Lys Ile Thr Cys Leu Val Val Asp Leu Ala Thr Met
145                 150                 155                 160
Glu Gly Met Asn Leu Thr Trp Tyr Arg Glu Ser Lys Glu Pro Val Asn
                165                 170                 175
Pro Gly Pro Leu Asn Lys Lys Asp His Phe Asn Gly Thr Ile Thr Val
            180                 185                 190
Thr Ser Thr Leu Pro Val Asn Thr Asn Asp Trp Ile Glu Gly Glu Thr
        195                 200                 205
Tyr Tyr Cys Arg Val Thr His Pro His Leu Pro Lys Asp Ile Val Arg
    210                 215                 220
Ser Ile Ala Lys Leu Pro Gly Lys Arg Leu Ala Pro Glu Val Tyr Met
225                 230                 235                 240
Leu Pro Pro Ser Pro Glu Glu Thr Gly Thr Thr Arg Thr Val Thr Cys
                245                 250                 255
Leu Ile Arg Gly Phe Tyr Pro Ser Glu Ile Ser Val Gln Trp Leu Phe
            260                 265                 270
Asn Asn Glu Glu Asp His Thr Gly His His Thr Thr Thr Arg Pro Gln
        275                 280                 285
Lys Asp His Gly Thr Asp Pro Ser Phe Phe Leu Tyr Ser Arg Met Leu
    290                 295                 300
Val Asn Lys Ser Ile Trp Glu Lys Gly Asn Leu Val Thr Cys Arg Val
305                 310                 315                 320
Val His Glu Ala Leu Pro Gly Ser Arg Thr Leu Glu Lys Ser Leu His
                325                 330                 335
Tyr Ser Ala Gly Asn
            340
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